

## BRIEFER ARTICLES

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JOSEPH YOUNG BERGEN

(WITH PORTRAIT)

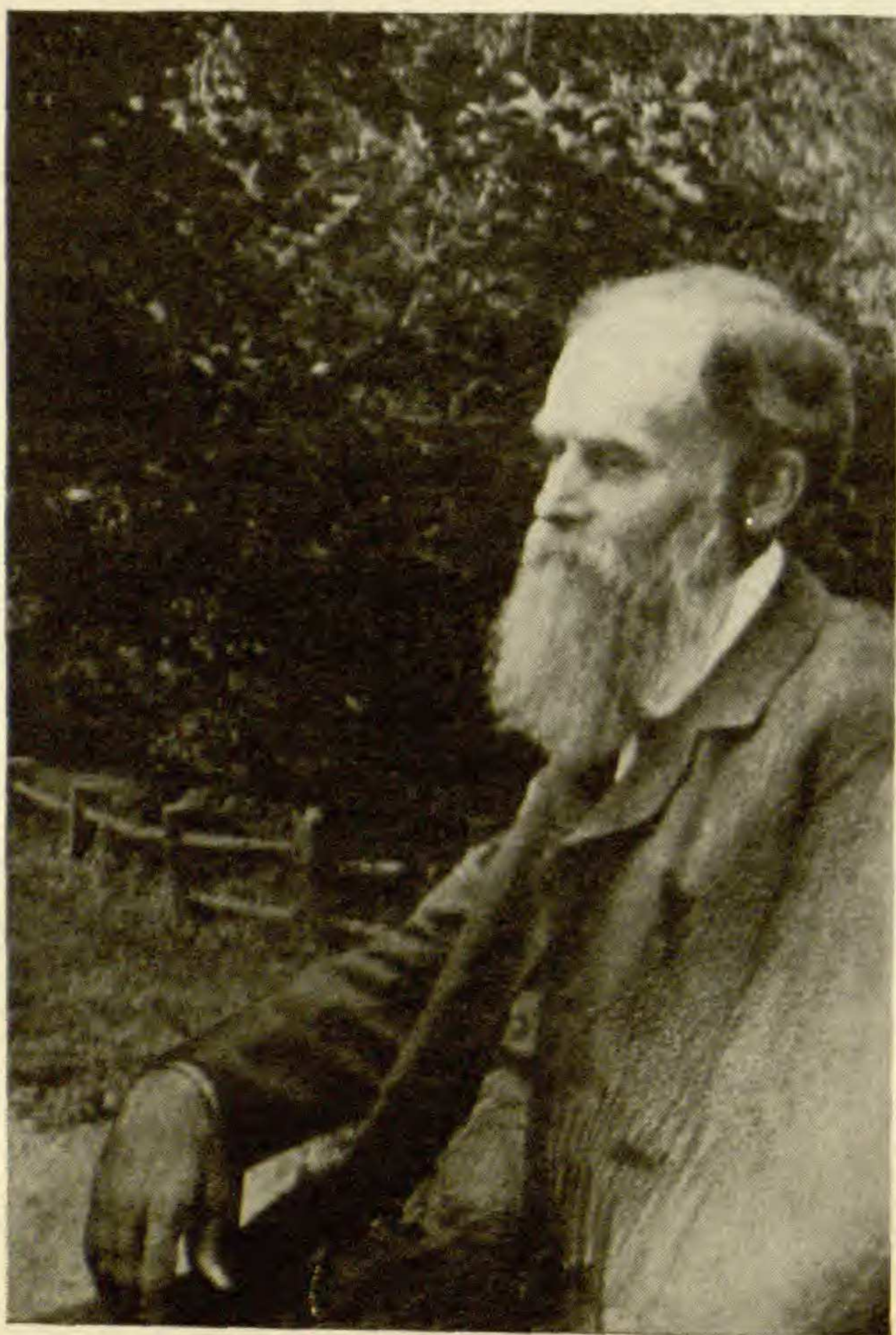
There are many ways of advancing science, and hardly less significant than the investigator is he who makes men wish to investigate. Unquestionably no small number of those who have advanced botany have come to it with an inclination formed before university days, and he who set their compass was often one of those wise enthusiasts who guided their first steps in science.

If we should take into account this service alone, American botany would acknowledge its debt to JOSEPH YOUNG BERGEN, who died at his home in Cambridge, Massachusetts, on October 10, 1917. He was born February 22, 1851, at Rye Beach, Maine, his family moving in 1855 to Peoria, Illinois, where for some years the family home was beautifully situated on the bluffs outside the city. Here the nature-loving parents were accustomed to take their children on pleasant country trips to gather flowers, fruits, or nuts, according to the season. This home influence was strengthened for our future botanist by an intimate acquaintance with Dr. STEWARD, an old-time physician of Peoria, who took the lad on many of his professional drives into the surrounding country. This amateur botanist watched the progress of growing things along the roadside, and new or especially interesting plants found their way into the doctor's buggy for more careful inspection at his leisure.

Although the boy was prepared for college chiefly by home study, he had some time in the grammar and high schools in Peoria and two years in the old academy at Pembroke, New Hampshire. In due course he went to Antioch College in southern Ohio, that small but memorable institution whose first president was HORACE MANN, of well known influence in the educational world. It is probable that at Antioch he received that bent toward geology which led to his first scientific work, done in connection with the Ohio State Geological Survey. Later he made practical application of his geological and chemical training in dealing with the problems of lead and zinc mining at Joplin, Missouri.

In 1876 he married FANNY DICKERSON, also of Antioch College, in collaboration with whom in 1890 he published "A Primer of Darwinism and Organic Evolution." Mrs. BERGEN's interests turned later to American folk lore, to which she has made a significant contribution.

In 1878, not long after his marriage, Mr. BERGEN returned to New England and began his long career as a teacher by becoming prin-



cipal of the high school at Deerfield, Massachusetts. Three years later he accepted an appointment as professor of the physical and biological sciences at Lombard College, a position which he relinquished after 2 years. In 1887 he became teacher of physics in the Boston Latin school. Physics as taught in the high schools of the time was more often an exercise in textbook study than one of application of principles to laboratory practice. Doubtless to one of Mr. BERGEN's broad experience and keen perception of real values the lack of adequate presentation came home with unusual force. In 1891, in collaboration with Pro-

fessor E. M. HALL of Harvard University, Mr. BERGEN brought out the well known textbook in high school physics which had a far-reaching and permanent influence on the teaching of this science in America. Although his chief interest was later transferred to botany, he maintained an active connection with the teaching of physics by acting for 10 years as instructor in this branch in the Harvard summer school.

In 1889 Mr. BERGEN went to the Boston English high school as a teacher in biology, where he remained for 12 years, during the remainder of his career as a teacher. Here again the need of a new presentation

of his subject for high school work led to the writing of his "Elements of Botany" in 1896. The practicable way in which the main features of the newer botany with its greater emphasis on the physiological aspects of the subject were brought out in text instruction and directions for laboratory study went far to make the book an important influence in turning botanical instruction in secondary schools away from the rather dry descriptions of form, to the more interesting and equally valuable study of the activities of life. This book and its successors, the "Foundations of Botany" (1901) with keys to the commoner plants of the great divisions of the country prepared by Miss ALICE EASTWOOD, Professor S. M. TRACY, and by himself, the "Principles of Botany" written in collaboration with Dr. BRADLEY M. DAVIS in 1906, "Essentials of Botany" (1908), "Practical Botany" in collaboration with Dr. OTIS W. CALDWELL in 1911, and "Introduction to Botany" by the same authors in 1914, have provided a series of elementary texts which have kept abreast of the newer movements in botanical development and have served to induct a vast host of young Americans into the study of plants. The success of these books brings sufficient evidence of a wise choice of material and of clearness and adequacy of presentation.

While Mr. BERGEN is perhaps most widely known as a teacher and writer of books, he was also a genuine investigator. Both by early training and by inclination a man of out-of-doors, he found his instincts for the field leading him toward the problems of ecology, and his perhaps equally strong inclination toward the precision of the laboratory investigator led him when opportunity presented itself to a fruitful application of laboratory methods to the study of plants in their environment. His opportunity came when in 1901 he retired from teaching and went to southern Italy, where in the neighborhood of Naples he spent some 4 years. Here he made use of the rich facilities of the Biological Station and made the valued acquaintance of FEDERICO DELPINO, Professor of Botany at Naples University, and of other members of the botanical faculty. He found great delight in tramping with Professor MATTEI, now of Palermo, who at that time was mapping the flora on the Solfatara, the partially active volcano near Pozzuoli. After a midday dinner at the Bergen residence they would "tramp off over that wonderful phlegrain plain, perhaps through a basaltic paved Greek lane, perhaps passing some wonderful ruined Greek temple or haunt of Horace or Virgil on their way out into the country." The results of this happy time found their way to the botanical world chiefly through short articles printed in the BOTANICAL GAZETTE and in *Plant*

*World* between 1903 and 1909. The transpiration problems of the xerophytes of the Neapolitan region, drought tolerance, reactions to light, and the behavior of strand halophytes were among the subjects dealt with in at least a dozen articles. One article on his friend DELPINO (*Science* 21:996) recalls the personal relations of those days.

Of course to one whose life had been given largely to teaching, pedagogical matters would necessarily present their claim, and here Mr. BERGEN's broad experience and sympathetic common sense always contributed genuine substance to the discussion. After his return to Cambridge from Italy, Mr. BERGEN's time was for the most part spent on his series of textbooks.

Although Mr. BERGEN took but little part in the work of scientific societies, the circle of botanists and zoölogists who in their Cambridge days found the Bergen home a place of sincere hospitality and of helpful appreciation and encouragement would of itself form a very respectable society. The direct searching comment, the enthusiastic cheering-on, and the sympathetic and straightforward honesty met there were tonic and corrective and stimulant all in one. There are many of us who feel that we owe him a never-to-be-forgotten debt for these and for still more precious gifts.

I am permitted to add an incident told immediately after Mr. BERGEN's death by the gentleman to whom it happened. A few years ago a western botanist, visiting the Harvard Botanic Garden, noticed a tall, spare man of distinguished appearance deeply absorbed in some observations he was making among the flower beds. The visitor asked one of the old gardeners near by if he could tell him the gentleman's name. The old man replied "We call him Saint Joseph."

I believe that in every one of the wide circle of those who called Mr. BERGEN friend this incident will find an echo. In remembering him we value the botanist and the teacher, we respect the far-reaching penetration and creative work of the scientist, and we acknowledge and revere the rigor, the force and moral fervor, the patience and exceeding gentleness of the saint.—RODNEY H. TRUE, *Bureau of Plant Industry, Washington, D.C.*